ABSTRACT

An interbody osteogenic fusion device is provided that includes opposite end pieces with an integral central element. The end pieces are sized to maintain the height of an intervertebral disc space. The central element has a much smaller diameter so that the osteogenic fusion device forms an annular pocke around the central element. An osteogenic material is disposed within the annular pocket between the opposite end pieces. In one embodiment,the osteogenic material constitutes a collagen sheet soaked in asolution containing a bone morphogenetic protein. The osteogenic fusion device is configured so that the osteogenic material is in direct contact with the adjacent vertebral bone. In addition to the enhanced area of contact between the vertebral bone and the fusion material, the inventive osteogenic fusion device reduces stress-shielding and minimizes the radiopacity of the implant so that growth of the fusion mass can be continuously assessed. In yet another embodiment, the osteogenic fusion device includes at least one end piece with a truncated surface. The osteogenic fusion devices of the present invention may be combined with other fusion devices to form an implant system. The implant system includes at least one load bearing member having a truncated surface configured to nest within another load bearing member, preferably the load bearing, osteogenic fusion device of the present invention. The invention also provides implant systems comprising adjacent load bearing members connected to one another to resist lateral separation. Methods of promoting fusion bone growth in the space between adjacent vertebrae utilizing devices and systems of the invention are also described.